

03-29-00

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**UTILITY PATENT APPLICATION TRANSMITTAL**  
**(Small Entity)***(Only for new nonprovisional applications under 37 CFR 1.53(b))*Docket No.  
9311.6

Total Pages in this Submission

**TO THE ASSISTANT COMMISSIONER FOR PATENTS****Box Patent Application**  
**Washington, D.C. 20231**

Transmitted herewith for filing under 35 U.S.C. 111(a) and 37 C.F.R. 1.53(b) is a new utility patent application for an invention entitled:

**METHODS AND APPARATUS FOR WIRELESS POINT-OF-SALE TRANSACTIONS**

and invented by:

Steven B. Smith

jc530 U.S. PTO  
09/536273If a **CONTINUATION APPLICATION**, check appropriate box and supply the requisite information:☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No.: \_\_\_\_\_

Which is a:

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No.: \_\_\_\_\_

Which is a:

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No.: \_\_\_\_\_

Enclosed are:

**Application Elements**

1. ☒ Filing fee as calculated and transmitted as described below
2. ☒ Specification having 21 pages and including the following:
  - a. ☒ Descriptive Title of the Invention
  - b. ☐ Cross References to Related Applications *(if applicable)*
  - c. ☐ Statement Regarding Federally-sponsored Research/Development *(if applicable)*
  - d. ☐ Reference to Microfiche Appendix *(if applicable)*
  - e. ☒ Background of the Invention
  - f. ☒ Brief Summary of the Invention
  - g. ☒ Brief Description of the Drawings *(if drawings filed)*
  - h. ☒ Detailed Description
  - i. ☒ Claim(s) as Classified Below
  - j. ☒ Abstract of the Disclosure

# UTILITY PATENT APPLICATION TRANSMITTAL (Small Entity)

(Only for new nonprovisional applications under 37 CFR 1.53(b))

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9311.6

Total Pages in this Submission

## Application Elements (Continued)

3. ☒ Drawing(s) (when necessary as prescribed by 35 USC 113)
- a. ☒ Formal      b. ☐ Informal      Number of Sheets 3
4. ☒ Oath or Declaration
- a. ☒ Newly executed (original or copy)      ☐ Unexecuted
- b. ☐ Copy from a prior application (37 CFR 1.63(d)) (for continuation/divisional application only)
- c. ☒ With Power of Attorney      ☐ Without Power of Attorney
- d. ☐ DELETION OF INVENTOR(S)  
Signed statement attached deleting inventor(s) named in the prior application,  
see 37 C.F.R. 1.63(d)(2) and 1.33(b).
5. ☐ Incorporation By Reference (usable if Box 4b is checked)  
The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.
6. ☐ Computer Program in Microfiche
7. ☐ Genetic Sequence Submission (if applicable, all must be included)
- a. ☐ Paper Copy
- b. ☐ Computer Readable Copy
- c. ☐ Statement Verifying Identical Paper and Computer Readable Copy

## Accompanying Application Parts

8. ☐ Assignment Papers (cover sheet & documents)
9. ☐ 37 CFR 3.73(b) Statement (when there is an assignee)
10. ☐ English Translation Document (if applicable)
11. ☐ Information Disclosure Statement/PTO-1449      ☐ Copies of IDS Citations
12. ☐ Preliminary Amendment
13. ☒ Acknowledgment postcard
14. ☒ Certificate of Mailing
- ☐ First Class      ☒ Express Mail (Specify Label No.): EL540510323US

# UTILITY PATENT APPLICATION TRANSMITTAL (Small Entity)

(Only for new nonprovisional applications under 37 CFR 1.53(b))

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9311.6

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## Accompanying Application Parts (Continued)

15. ☐ Certified Copy of Priority Document(s) (if foreign priority is claimed)
16. ☒ Small Entity Statement(s) - Specify Number of Statements Submitted: 1
17. ☐ Additional Enclosures (please identify below):

## Fee Calculation and Transmittal

### CLAIMS AS FILED

For	#Filed	#Allowed	#Extra	Rate	Fee
Total Claims	20	- 20 =	0	x \$9.00	\$0.00
Indep. Claims	5	- 3 =	2	x \$39.00	\$78.00
Multiple Dependent Claims (check if applicable) <input type="checkbox"/>					\$0.00
BASIC FEE					\$345.00
OTHER FEE (specify purpose)					\$0.00
TOTAL FILING FEE					\$423.00

- ☒ A check in the amount of \$423.00 to cover the filing fee is enclosed.
- ☒ The Commissioner is hereby authorized to charge and credit Deposit Account No. 50-0843 as described below. A duplicate copy of this sheet is enclosed.
- ☐ Charge the amount of \_\_\_\_\_ as filing fee.
- ☒ Credit any overpayment.
- ☒ Charge any additional filing fees required under 37 C.F.R. 1.16 and 1.17.
- ☐ Charge the issue fee set in 37 C.F.R. 1.18 at the mailing of the Notice of Allowance, pursuant to 37 C.F.R. 1.311(b).

Dated: March 21, 2000

  
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cc:

**VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY  
STATUS (37 CFR 1.9(f) AND 1.27 (c)) - SMALL BUSINESS CONCERN**

Docket No.  
9311.6

Serial No.  
not assigned

Filing Date  
not assigned

Patent No.  
not assigned

Issue Date  
not assigned

Applicant/ Steven B. Smith  
Patentee:

Invention: **METHOD AND APPARATUS FOR WIRELESS POINT-OF-SALE TRANSACATIONS**

I hereby declare that I am:

- ☒ the owner of the small business concern identified below:  
☐ an official of the small business concern empowered to act on behalf of the concern identified below:

NAME OF CONCERN: In2M.com LLC

ADDRESS OF CONCERN: 4515 South Butternut Road, Holladay, Utah 84117

I hereby declare that the above-identified small business concern qualifies as a small business concern as defined in 37 CFR 121.3-18, and reproduced in 37 CFR 1.9(d), for purposes of paying reduced fees under Section 41(a) and (b) of Title 35, United States Code, in that the number of employees of the concern, including those of its affiliates, does not exceed 500 persons. For purposes of this statement, (1) the number of employees of the business concern is the average over the previous fiscal year of the concern of the persons employed on a full-time, part-time or temporary basis during each of the pay periods of the fiscal year, and (2) concerns are affiliates of each other when either, directly or indirectly, one concern controls or has the power to control the other, or a third party or parties controls or has the power to control both.

I hereby declare that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the above identified invention described in:

- ☒ the specification filed herewith with title as listed above.  
☐ the application identified above.  
☐ the patent identified above.

If the rights held by the above-identified small business concern are not exclusive, each individual, concern or organization having rights to the invention is listed on the next page and no rights to the invention are held by any person, other than the inventor, who could not qualify as an independent inventor under 37 CFR 1.9(c) or by any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern or organization to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

- ☒ no such person, concern or organization exists.  
☐ each such person, concern or organization is listed below.

FULL NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

☐ Individual

☐ Small Business Concern

☐ Nonprofit Organization

FULL NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

☐ Individual

☐ Small Business Concern

☐ Nonprofit Organization

FULL NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

☐ Individual

☐ Small Business Concern

☐ Nonprofit Organization

FULL NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

☐ Individual

☐ Small Business Concern

☐ Nonprofit Organization

Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

NAME OF PERSON SIGNING:

Steven B. Smith

TITLE OF PERSON SIGNING

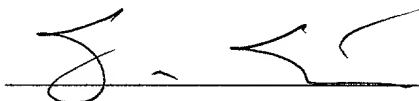
OTHER THAN OWNER:

President

ADDRESS OF PERSON SIGNING:

4515 South Butternut Road, Holladay, UT 84117

SIGNATURE:



DATE:

March 24, 2000

Express Mailing Label No. EL540510323US

PATENT APPLICATION  
Docket No. 9311.6

**UNITED STATES PATENT APPLICATION**

**of**

**STEVEN B. SMITH**

**for**

**METHODS AND APPARATUS FOR  
WIRELESS POINT-OF-SALE TRANSACTIONS**

**KIRTON & McCONKIE**

A PROFESSIONAL CORPORATION

ATTORNEYS AT LAW

1800 EAGLE GATE TOWER

60 EAST SOUTH TEMPLE

SALT LAKE CITY, UTAH 84111

## **The Field of the Invention**

The present invention relates to methods and apparatus for point-of-sale transactions using wireless communication devices. Embodiments of the present invention utilize wireless purchasing devices (WPDs) to communicate with point-of-sale wireless vendor devices (WVDs) and arrange the electronic transfer of assets to complete a sale. WPDs of embodiments of the present invention may negotiate a purchase code with a WVD and obtain authorization to complete a purchase identified in the purchase code directly from a creditor or account holder. When authorization is approved, an authorization code is transmitted from the creditor/account holder directly to the WPD and a purchase authorization code is transmitted to the WVD to complete the transaction. Embodiments of the present invention may be used with human-operated vendor devices such as electronic cash registers or with automated vendor devices such as electronic vending machines.

## **Background**

Electronic transactions involving the transfer of money and pecuniary assets are common in our society today. Stocks and bonds may be purchased and traded using only electronic transactions. Goods and services are also commonly purchased over the telephone or via the Internet using credit or debit accounts with electronic authorization.

Retail vendors typically accept credit and debit cards which are verified and authorized using electronic communications methods. Nearly every significant retail vendor accepts some form of credit or debit card as remuneration for goods or services. The accounts accessed through these cards are typically identified by a number embossed on the card and a magnetic strip on the card's surface that is encoded with account information. Transactions involving a credit or debit card account require authorization from the organization who issues the card. This authorization is generally obtained at the point-of-sale by a vendor through electronic communications channels. A transaction amount is

1 determined and the amount of the transaction along with the account identification  
2 information are transmitted to the organization which issued the card. If the account has  
3 sufficient credit or funds to cover the transaction amount and the account has not been  
4 deactivated for some other reason, the card issuer will send an authorization code to the  
5 vendor which indicates that the issuer will transfer the authorized amount to the vendor at  
6 an appropriate time.

7 Account information may be obtained by swiping the electronic strip of the card  
8 across a magnetic reader thereby eliminating the need for manual input. The transaction  
9 amount may also be transferred from an electronic cash register and combined with the  
10 account information automatically to make an authorization request.

11 These point-of-sale authorization request devices are typically connected to the card  
12 issuers or their representatives, sometimes known as authorization processors, through a  
13 conventional telephone line. Often a dedicated phone line is connected to the point-of-sale  
14 authorization device for quick access to authorization data.

15 These point-of-sale devices may also be connected via wireless telecommunications  
16 connections, generally with cell phone or cell modem technology. This wireless connection  
17 allows the point-of-sale device to be more portable, but still requires a dedicated or available  
18 communications link to the authorization processor.

19 Known authorization request systems and methods all employ a communications  
20 link between the vendor and authorization processor whether the link be a land line or a  
21 wireless link. These systems require the vendor to maintain a communications link for each  
22 sales terminal. For conventional, wired systems this may amount to multiple dedicated  
23 phone lines often with long-distance connection charges. For wireless systems, an expensive  
24 cell-phone-based account or other wireless provider account is required. These connections  
25 can be expensive to maintain and can cripple a vendor when service is interrupted.

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1 A full-time communication link can also be impractical or uneconomical for low  
2 volume vendors who do not have sufficient profit to justify the connection costs. Vending  
3 points in remote locations may not justify the cost of a wireless connection.

4 With known systems and methods, each vendor must maintain a proprietary  
5 communications link between the vending point and the authorization processor. When  
6 multiple vendors occupy a single location, multiple communications links must be  
7 maintained thereby increasing energy demands and monopolizing available communications  
8 bandwidth.

9 The costs of vendor communication links add to vendor overhead which must be  
10 accounted for by increasing revenue, typically through increased product prices. Therefore,  
11 the consumer eventually pays the price for this communication and any associated  
12 inefficiency.

13 Wireless communication technology has progressed rapidly in recent years. Cell  
14 phones and other long-range communication devices have proliferated and are now  
15 commonplace among consumers. As technology advances, the cost of these devices is  
16 plummeting and even more widespread use is eminent. Mobile phones, pagers, two-way  
17 radios, smartphones, personal digital assistants (PDAs) and other communicators are all  
18 available on the market.

19 Internet use is also skyrocketing with millions of new users logging on each year.  
20 Internet commerce now represents a significant portion of retail commerce and is used by  
21 millions of consumers each day.

22 Communications protocols exist which allow present generation electronic  
23 communications devices to interface with the Internet and access Internet resources. The  
24 Wireless Application Protocol (WAP) is an open, global specification that enables mobile  
25 wireless communications devices to access and interact with Internet information and  
26 services. WAP is a communications protocol and environment which can be built on nearly

1 any operating system including PalmOS, EPOC, Windows CE, FLEXOS, OS/9, JavaOS and  
2 others and provides service interoperability between different device families. WAP works  
3 with most existing wireless communications networks such as CDPD, CDMA, GSM, PDC,  
4 PHS, TDMA, FLEX, ReFLEX, iDEN, TETRA, DECT, DataTAC, Mobitex and others.  
5 WAP developers operate Internet gateways specifically tailored for wireless communications  
6 device users. These devices typically have small displays, limited memory and less  
7 bandwidth than stationary, wire connected computers, therefore, WAP provides for use of  
8 eXtended Markup Languages (XMLs) such as the Wireless Markup Language (WML) which  
9 offers Internet content tailored for cell phones, PDAs and other wireless, portable  
10 communications devices.

11 Using WAP and similar technologies, vendors, news agencies, financial institutions  
12 and other providers allow cell phone and other portable communications device users to buy  
13 and sell securities, execute credit card transactions, make account transfers, make bill  
14 payments, receive and send e-mail, view news reports. These providers offer seamless  
15 integration between the Internet and wireless portable communication devices.

16 Wireless communication devices are also becoming commonplace in the electronics  
17 industry. Wireless networking of portable computers and associated devices is now  
18 replacing a large segment of the networking market. Wireless communication devices  
19 including wireless networking adapters, hubs and other equipment utilize radio transmitters  
20 and receivers to transmit data signals from one device or node to another. These radio  
21 transmitters and receivers must utilize a specific frequency band and protocol to accomplish  
22 this task. Since these wireless networks and communications areas may often overlap,  
23 standards, protocols and privacy protection are necessary. One current standard in the  
24 industry has been established by the Institute of Electrical and Electronics Engineers, Inc.  
25 (IEEE) and is known as IEEE 802.11. This standard comprises communications standards,  
26

1 protocol and equipment specifications for wireless communication equipment including  
2 privacy and encryption provisions.

3 Another innovation in the wireless communications arena is the advent of short-  
4 range wireless networking between portable communications devices. One standard for this  
5 technology is known as Bluetooth®, and is being established by a collaborative group of  
6 communications and computing companies. Devices incorporating Bluetooth® technology  
7 will utilize a micro-chip transceiver for communications between devices. Bluetooth®  
8 devices will transmit in the previously unused 2.4 GHz range and will have a range of about  
9 10 meters which may be extended to about 100 meters by increasing transmitter power.  
10 Bluetooth® technology promises to be a viable and economical networking solution for  
11 interconnection of cell phones, computers, printers, modems, computer peripherals, fax  
12 machines and other communications and computing devices. The size of the Bluetooth®  
13 transceiver makes it usable in devices as small as palm computers and cell phones.

14 Another established wireless connectivity standard is known as IrDA and employs  
15 infrared radiation to communicate between devices. IrDA is a point-to-point narrow angle,  
16 ad-hoc data transmission standard designed to operate over a distance of 0 to 1 meter at speeds  
17 of 9600 bps to 16 Mbps. It is typically used in a point-and-shoot fashion by pointing one  
18 device at another for direct data transmission.

19 The combination of some of the above technologies allows a user to use a single  
20 electronic device to communicate with other electronic devices in a short range network or  
21 direct data link while establishing a long-range communications connection with mobile  
22 phone or other technology.

## SUMMARY AND OBJECTS OF THE INVENTION

Preferred embodiments of the present invention provide systems, methods and apparatus which provide for short range communication with a point-of-sale device combined with long-range communication with a credit or debit authorization processor. As a non-limiting example, an embodiment of the present invention in the form of a PDA may communicate with a point-of-sale device to determine vendor identification and a sale amount. The vendor/sale data is combined with credit or debit account data and forwarded to an authorization processor as a request for authorization of the sale amount. The authorization processor processes the request and transmits an authorization approval or denial to the PDA through a long range communication system. The authorization is then transmitted to the vendor's point-of-sale device to complete the transaction.

Embodiments of the present invention allow for transactions with multiple vendors. A consumer with a wireless purchasing device (WPD) may enter an area in which several vendors have point-of-sale devices which can communicate with the WPD. As the consumer enters communication range with the point-of-sale devices, a menu on the WPD is updated to reflect the products available from vendors in communication range along with associated prices and related data. A consumer may select from the available products and initiate the purchase. Vendor information, product identification and pricing data received from the point-of-sale devices is processed into purchase requests for each vendor selected and the purchase requests are transmitted to one or more authorization processors. If the purchases are authorized, the authorization approval is transmitted back to the WPD and the consumer completes the transaction by transmitting a charge or debit authorization to the point-of-sale devices thereby enabling product access or delivery of the purchased products.

Accordingly it is an object of some embodiments of the present invention to provide systems, method and apparatus for obtaining a point-of-sale purchase authorization.

1 It is another object of some embodiments of the present invention to provide systems  
2 methods and apparatus for obtaining a point-of-sale purchase authorization for a purchase  
3 from a vendor who does not have a communications link with an authorization processor.  
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## **BRIEF DESCRIPTION OF THE DRAWINGS**

In order that the manner in which the above-recited and other advantages and objects of the invention are obtained, a more particular description of the invention briefly described above will be rendered by reference to specific embodiments thereof which are illustrated in the appended drawings. Understanding that these drawings depict only typical embodiments of the invention and are not therefore to be considered to be limiting of its scope, the invention will be described and explained with additional specificity and detail through the use of the accompanying drawings in which:

Figure 1 is a diagram showing components of a preferred embodiment of the present invention;

Figure 2 is a diagram illustrating the typical use of an embodiment of the present invention with a single WVD; and

Figure 3 is a diagram illustrating the typical use of an embodiment of the present invention with multiple WVDs.

1                   **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS**

2                   The present invention may be embodied in other specific forms without departing  
3 from its spirit or essential characteristics. The described embodiments are to be considered  
4 in all respects only as illustrated and not restrictive. The scope of the invention is, therefore,  
5 indicated by the appended claims rather than by the foregoing description. All changes  
6 which come within the meaning and range of equivalency of the claims are to be embraced  
7 within their scope.

8                   Preferred embodiments of the present invention comprise a portable electronic  
9 communications device which is capable of communicating with a vendor's point-of-sale  
10 device and capable of communicating with an independent financial institution such as a  
11 bank or credit lender. In many embodiments, these two communication functions will be  
12 achieved using two communications protocols or methods. One method will employ a short  
13 range communication or networking device to communicate with a vendor's point-of-sale  
14 device. The other method will use a long range wireless communication system to contact  
15 financial institutions for payment authorization and execution.

16                  In reference to Figure 1, a preferred embodiment of a consumer's wireless purchasing  
17 device (WPD) 2 is shown comprising a microprocessor 4 for processing consumer input,  
18 communications functions and display functions as well as other functions. WPD 2 may also  
19 comprise a display 6 in preferred embodiments, however display 6 is not required for  
20 rudimentary embodiments. An input device 8 may also be part of WPD 2 to allow for  
21 consumer input and selection. WPD 2 may communicate with other electronic devices using  
22 a short-range communications device 14. Short range communications device 14 may be  
23 used to communicate with a vendor's point-of-sale device, such as wireless vending device  
24 (WVD) 20, with other WPDs, with external communication device or with other electronic  
25 devices. However, the key function of short range communications device 14 is to  
26 communicate with WVDs, and in some embodiments with external long range

1 communication device 16. Short range communications device 14 may be a Bluetooth®  
2 transceiver or similar short range networking device or may be an Infrared transceiver such  
3 as an IrDA standard port as well as other devices.

4 Some embodiments of the WPD of the present invention will also comprise a long  
5 range communications device 12 for communication with an authorization provider 30.  
6 Long range communications device 12 may take the form of a cell modem, radio modem or  
7 other wireless communications device capable of transmitting and receiving data over a large  
8 area.

9 When a consumer already has possession of a cell phone or other long range  
10 communications device 16 which also has short range communications ability, such as a  
11 Bluetooth® enable cell phone, the consumer may prefer to use a less-expensive embodiment  
12 of the WPD which uses short range communications device 14 to interact with the external  
13 long range communications device 16 for contact with authorization provider 30.

14 Some embodiments of the WPD of the present invention may also comprise a  
15 biometric input device 10 to verify user identity. Biometric input device 10 may use thumb  
16 print analysis, retinal scan analysis or another identification method to identify the WPS user.  
17 Once the user is identified, user identity can be matched to account data to ensure that  
18 unauthorized users do not gain access to sensitive information or other user's accounts.

19 Embodiments of the present invention also comprise a wireless vendor device  
20 (WVD) 20 which is typically positioned at a point-of-sale for communication with WPDs.  
21 WVD 20 will generally comprise a short range communications device 24 configured to  
22 communicate with short range communications device 14 used in WPDs. As with  
23 communications device 14, device 24 may be a Bluetooth® transceiver, an IrDA port or  
24 another communications device. In situations where multiple vendors are accessible to a  
25 single WPD at the same time, a Bluetooth® transceiver or similar networking device is  
26 preferred to allow multiple party communications. Short range communications device 24



1 is connected to a vendor device 22 which is typically an electronic computing device such  
2 as an electronic cash register, an electronic vending machine, a bar-code reader or other  
3 device which may transmit and receive product and transaction information.

4 As embodiments of the present invention are to be used with credit and debit card  
5 accounts which generally require authorization before funds may be transferred, WPDs may  
6 communicate with authorization providers 30 using long range communication device 12 or  
7 16. WPD communication device 12 or 16 may communicate with authorization long range  
8 communications device 34 using known wireless communications methods such as through  
9 the use of wireless modems. This communication may be direct between communication  
10 device 12 or 16 and 34 or may involve a wireless communications base 36 which receives  
11 and transmits wireless signals and converts them to a wired connections such as with a  
12 standard telephone line. Authorization communications device 34 provides access to  
13 authorization computer 32 which may authorize credit and debit transactions and execute  
14 transfers of funds to the appropriate accounts.

15 A variety of communication protocols and methods are known and commonly used  
16 in the industry, therefore, the information transfer used in some embodiments of the present  
17 invention is shown in a generic format in Figure 2. Typically a purchase transaction will  
18 commence by establishing communication between a WPD 2 and a WVD 20. WPD may  
19 receive product or service information from WVD which may be presented on the display  
20 6 of WPD 2. In some embodiments, a consumer may then make a selection between menu  
21 items presented on display 6 or otherwise indicate a desire to make a purchase. In some  
22 situations, a WVD may simply transmit a transaction amount and vendor identification to the  
23 WPD, such as when a cashier has tallied a total and seeks payment or when an automated  
24 vending machine offers a single selection. In most situations, the WVD 20 and WPD 2 will  
25 communicate 44 with or without vendor and consumer input until a total purchase amount  
26 is reached. When a transaction amount is established, the WPD 2 will use its long range

1 communications ability to contact an authorization provider 30 to request authorization 46  
2 of the credit or debit transaction. Authorization processor 30 will check the consumer's  
3 account to verify that sufficient funds or credit are available and make any other necessary  
4 verification as required. If authorization is denied, a denial 48 will be transmitted to the  
5 WPD 2 and the consumer will be notified on the WPD display 6 that the transaction cannot  
6 be completed. If the authorization is approved, an authorization approval 50 will be  
7 transmitted to the WPD 2 which will use its short range communications link to pass the  
8 authorization to the WVD to inform the vendor of the transaction so that the goods or  
9 services may be released.

10 Authorization by authorization processor 30 also causes a request to be transmitted  
11 from processor 30 to the customer's financial institution 40 to transfer funds from the  
12 customer's account to the vendor's account 42.

13 In this manner, the transaction may be completed without any direct communication  
14 between a vendor and an authorization processor or financial institution. This method allows  
15 a vendor to operate a WVD at a point-of-sale without the expense and inconvenience or a  
16 long range communication connection. This method also allows the consumer to retain  
17 confidential account information without disclosure to vendor personnel or exposure to the  
18 risks present in the vendor's system.

19 In reference to Figure 3, embodiments of the present invention which accommodate  
20 multiple, simultaneous vendors are illustrated. In these embodiments WVDs and WPDs will  
21 generally utilize wireless networking technology such as Bluetooth® transceivers or others  
22 to communicate. WVD1 61, WVD2 62 and WVD3 63 are present within communication  
23 range of a single WPD 2 and communication between WVDs 61, 62 and 63 and WPD 2 is  
24 initiated upon communication contact. In a preferred embodiment WVDs 61, 62 and 63 will  
25 transmit menu options to WPD 2 to inform the consumer of available products and to  
26 identify the vendors associated with the WVDs. WVDs 61, 62 and 63 may be electronic

1 vending machines or other vendor devices. A consumer may view the menu 60 on the WPD  
2 display 6 to see the available products and make selections with WPD input device 8. When  
3 a final selection is made by the consumer, the WPD 2 will request authorization for the  
4 purchase by contacting authorization provider 30. Authorization provider 30 may request  
5 user identification before approval. Identification may be provided through the use of a  
6 confidential PIN number or for increased security may be provided by biometric  
7 identification device 10. When identification is verified, authorization provider 30 will  
8 check account status and approve or deny the transaction according to internal rules. If  
9 approval is granted, an authorization approval is transmitted to WPD 2 and a transfer of  
10 funds request is transmitted to the consumer's financial institution 40 who will transfer  
11 appropriate amounts of funds to the accounts 71, 72 and 73 of vendors who were selected in  
12 the consumers menu selection on the WPD 2.

13 When the WPD 2 receives the authorization approval, the approval is displayed to  
14 the consumer on display 6 (in embodiments with displays) and a transaction finalization  
15 command is transmitted from WPD 2 to WVDs 61, 62 and 63 to instruct WVDs to release  
16 the purchased products, provide the purchased services or otherwise credit the consumer for  
17 the purchase.

18 I claim:  
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- 1 1. An apparatus for completing wireless point-of-sale purchase transactions  
2 comprising:  
3 a long range communications device for communicating with an  
4 authorization processor;  
5 a short range communications device for communicating with a point-  
6 of-sale wireless vendor device;  
7 a microprocessor; and  
8 an input device.  
9
- 10 2. The apparatus of claim 1 further comprising a display.  
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- 12 3. The apparatus of claim 1 further comprising a bio-metric input device.  
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- 14 4. The apparatus of claim 1 wherein said long range communications device is  
15 external.  
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5. A system for completing wireless point-of-sale purchase transactions comprising:
- a wireless purchase device comprising
    - a long range communications device for communicating with an authorization processor,
    - a short range communications device for communicating with a point-of-sale wireless vendor device,
    - a microprocessor, and
    - an input device; and
  - a point-of-sale wireless vendor device comprising
    - a short range communications device, and
    - a vendor computing device.
6. The system of claim 5 further comprising an authorization processor connected to a long range communications device.
7. The system of claim 5 further comprising a display for said wireless purchase device.
8. The system of claim 5 further comprising a bio-metric input device for user identification.

9. A method for completing wireless point-of-sale purchase transactions comprising the acts of:
- communicating between a WPD and a WVD to identify a vendor and establish a purchase price;
  - requesting purchase authorization from an authorization provider;
  - transmitting a transaction denial to said WPD if said purchase is not authorized by said authorization provider thereby terminating said request;
  - transmitting a transaction approval to said WPD and transmitting a request to transfer funds to a financial institution if said purchase is authorized by said authorization provider; and
  - transmitting a transaction finalization command to said WVD to request transaction release.
10. The method of claim 9 further comprising the act of identifying a user with a biometric input device.
11. The method of claim 9 wherein said communicating between a WPD and a WVD is effectuated using short range wireless transceivers.
12. The method of claim 9 wherein said requesting purchase authorization is effectuated using a long range, wireless communications device.

13. A method for completing wireless point-of-sale purchase transactions comprising:
- 1 establishing a wireless network between a WPD and a WVD;
- 2 communicating a vendor identification and a purchase price to said
- 3 WPD over said wireless network;
- 4 requesting purchase authorization from an authorization provider;
- 5 transmitting a transaction denial to said WPD if said purchase is not
- 6 authorized by said authorization provider thereby terminating
- 7 said request;
- 8 transmitting a transaction approval to said WPD and transmitting a
- 9 request to transfer funds to a financial institution if said
- 10 purchase is authorized by said authorization provider; and
- 11 transmitting a transaction finalization command to said WVD to request
- 12 transaction release.
14. The method of claim 13 wherein said requesting purchase authorization is
- 15 effectuated using a long range communications device.
15. The method of claim 14 wherein said long range communications device is a
- 16 wireless device.
16. The method of claim 14 wherein said long range communications device is
- 17 integral to said WPD.
17. The method of claim 14 wherein said long range communications device is
- 18 external to said WPD, but operated by a WPD user.

18. The method of claim 13 wherein said requesting purchase authorization is effectuated using a wireless phone.

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19. A method for completing wireless point-of-sale purchase transactions comprising steps for:
- communicating between a WPD and a WVD to identify a vendor and establish a purchase price;
  - requesting purchase authorization from an authorization provider;
  - transmitting a transaction denial to said WPD if said purchase is not authorized by said authorization provider thereby terminating said request;
  - transmitting a transaction approval to said WPD and transmitting a request to transfer funds to a financial institution if said purchase is authorized by said authorization provider; and
  - transmitting a transaction finalization command to said WVD to request transaction release.
20. The method of claim 19 further comprising a step for identifying a user with a biometric input device.

## ABSTRACT OF THE INVENTION

1           The present invention relates to systems, methods and apparatus for making  
2 purchase transactions at a point-of-sale. A wireless purchase device (WPD) comprising a  
3 short range communications device for communication with vendor point-of-sale equipment  
4 such as a wireless vendor device (WVD) and a long range communications device for  
5 communications with credit or debit authorization processors. In preferred embodiments, a  
6 WVD will communicate vendor identification data and a transaction purchase price to a WPD  
7 and a WPD user will determine whether to complete the transaction. The transaction may be  
8 completed by transmitting the vendor identification and purchase data to an authorization  
9 processor for credit or debit approval. Authorization approval or denial is transmitted to the  
10 WPD where the user is discretely notified of the outcome. If approved, the user may transmit  
11 the approval to the WVD to complete the transaction. Using the systems and methods of the  
12 present invention, vendors need not maintain long range communications between points-of-  
13 sale and authorization processors or other parties. Purchasers also benefit from the discrete  
14 notification of credit or debit approval or rejection.  
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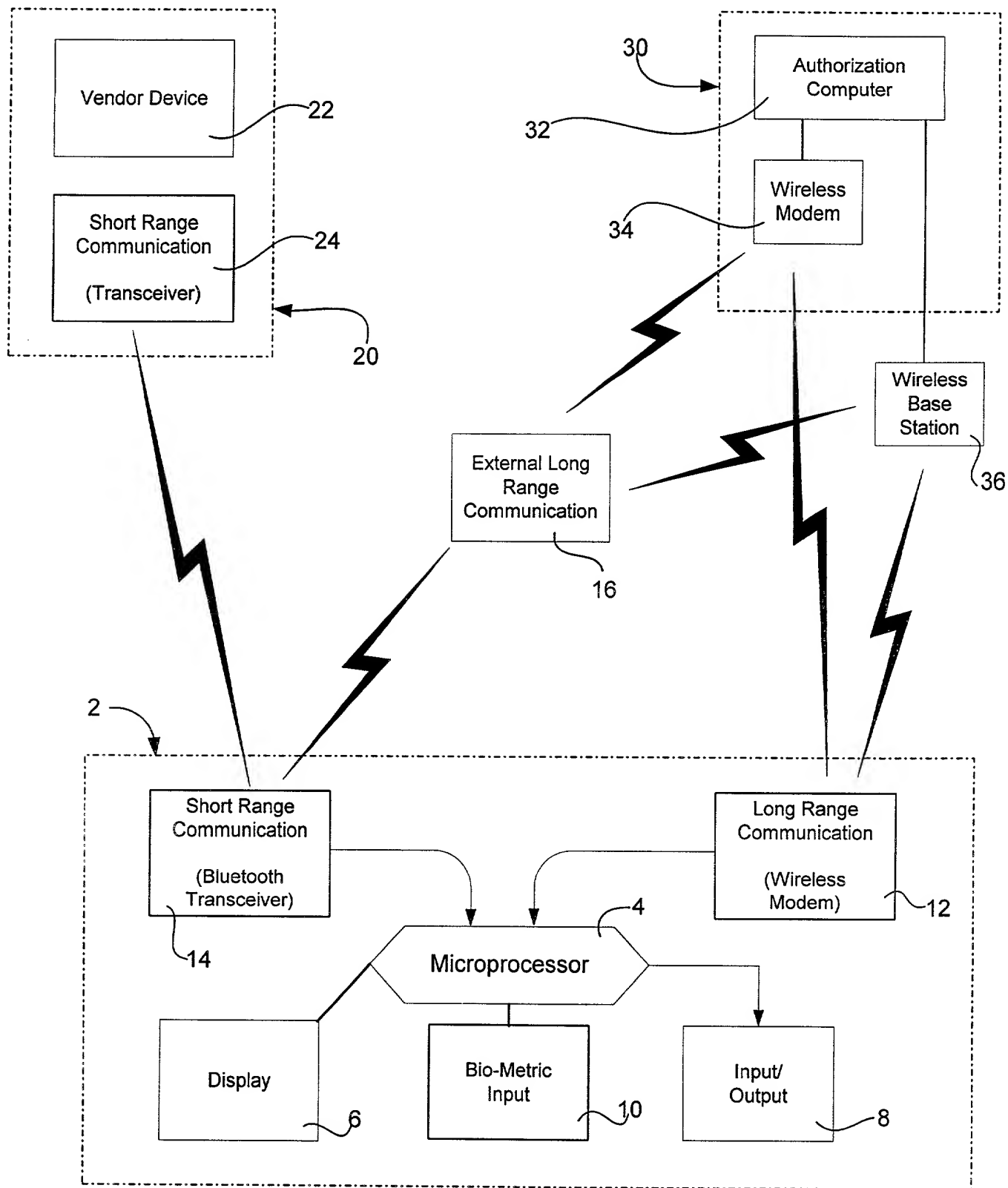
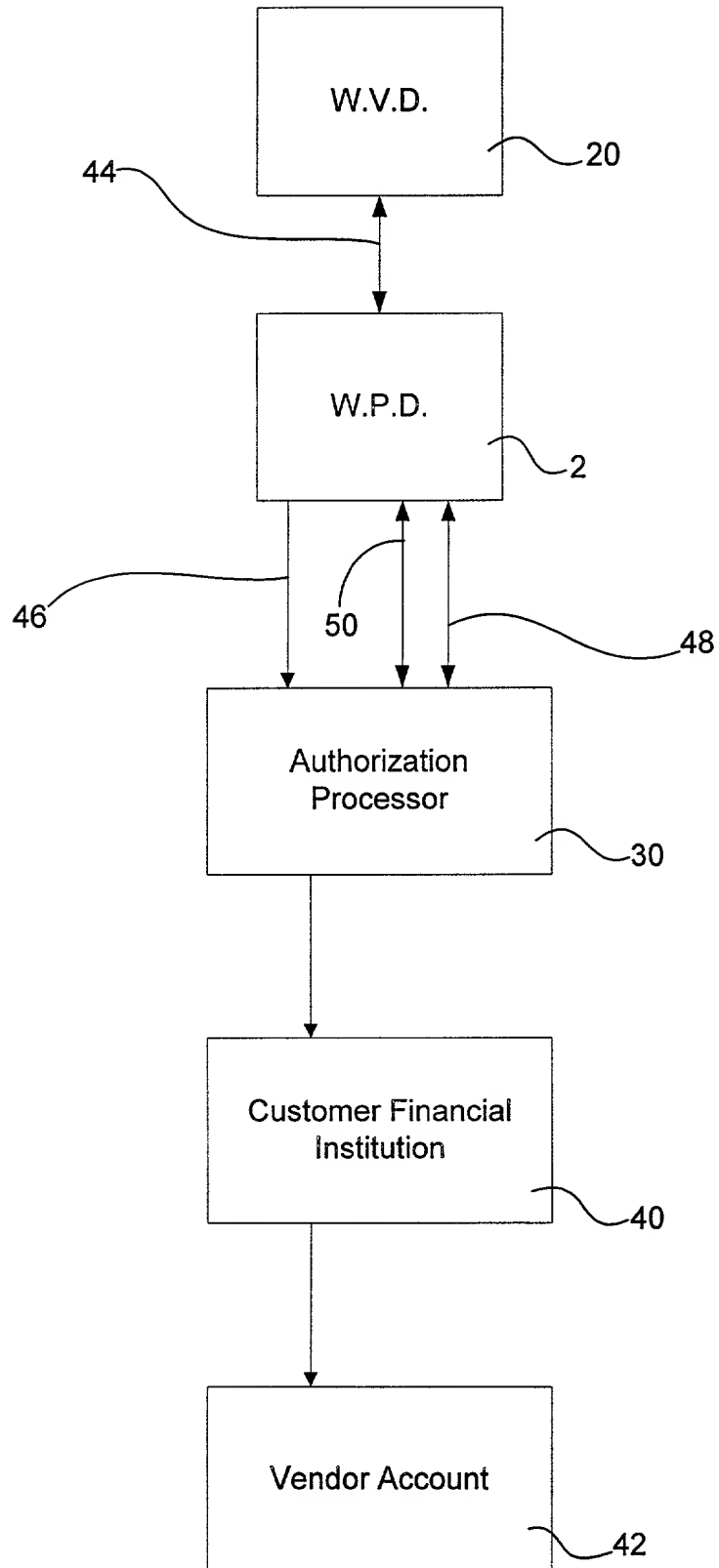
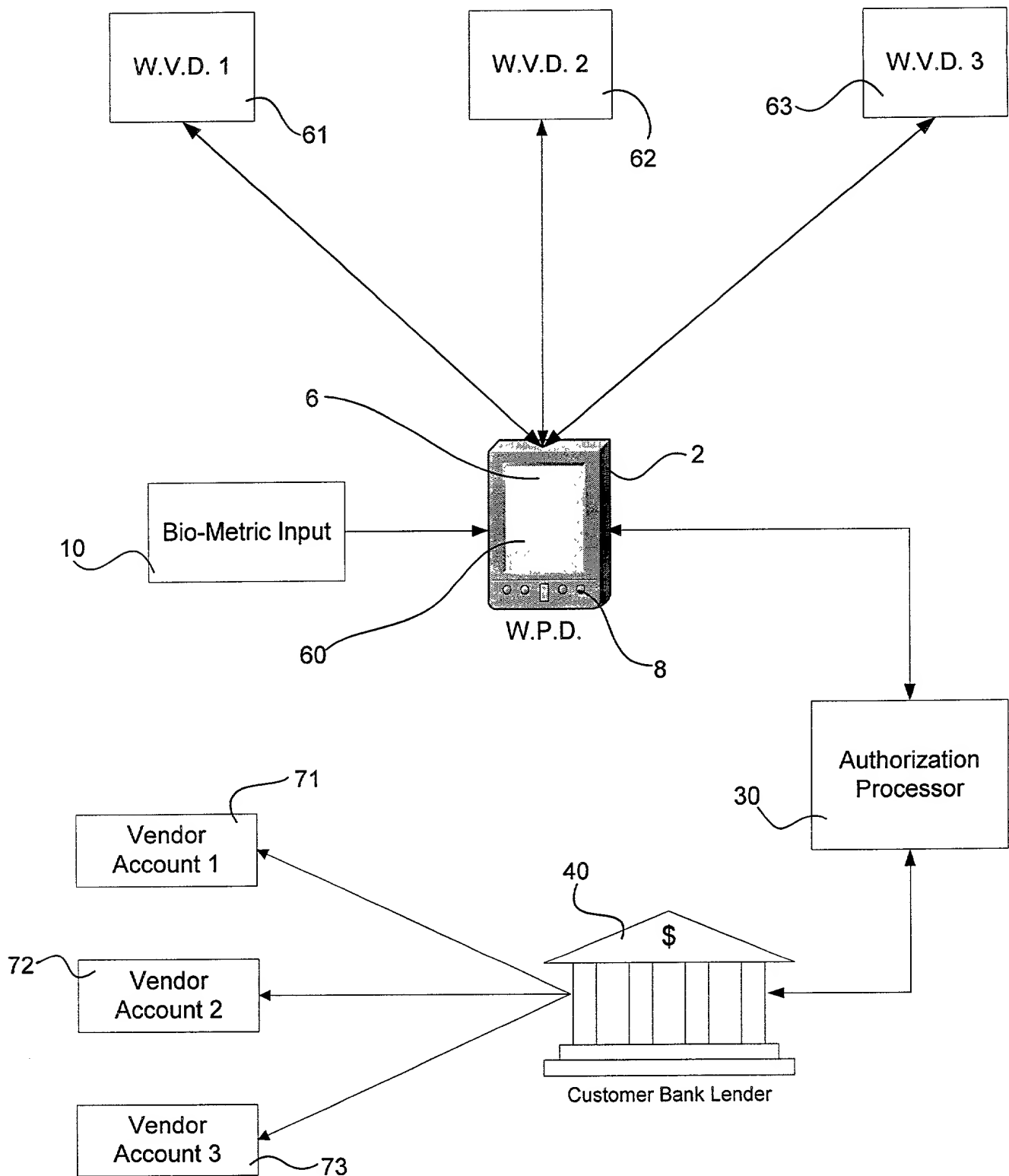


Figure 1



**Figure 2**



**Figure 3**

Docket No.  
9311.6

# Declaration and Power of Attorney For Patent Application

## English Language Declaration

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

### METHODS AND APPARATUS FOR WIRELESS POINT-OF-SALE TRANSACTIONS

the specification of which

(check one)

☒ is attached hereto.

☐ was filed on \_\_\_\_\_ as United States Application No. or PCT International Application Number \_\_\_\_\_ and was amended on \_\_\_\_\_ (if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119(a)-(d) or Section 365(b) of any foreign application(s) for patent or inventor's certificate, or Section 365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate or PCT International application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s)

Priority Not Claimed

_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	<input type="checkbox"/>
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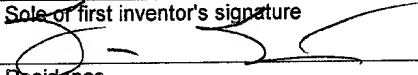
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Invention: METHODS AND APPARATUS FOR WIRELESS POINT-OF-SALE TRANSACTIONS

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09/536273  
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